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EXAMINER SORKIN, DAVID L.				
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The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/759,560
Filing Date: January 15, 2004
Appellant(s): ZHA ET AL.

Nicole A. Palmer
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12 February 2009 appealing from the Office action mailed 11 June 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

Claims 1-20 are pending.

Claims 1-20 are rejected.

Claims 1-20 are appealed.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 3,791,631	Meyer	02-1974
US 3,442,002	Geary et al.	05-1969
JP 61-167407 A	Uchida et al.	07-1986

A translation of Uchida provided by applicant was entered into the file wrapper 08 November 2006.

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1, 3, 4, 7-15, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (JP 61-167407 A) in view of Meyer (US 3,791,631). Regarding claim 1, Uchida discloses a method for forming at least one opening (5) in a membrane pot, the method comprising providing at least one membrane (2), the membrane having two ends; providing a mold (9,11,12) for potting the membrane end, the mold comprising a base (12) comprising at least one formation (11) for forming at least one opening (5) in a membrane pot; filling the mold with a curable potting material (3); positioning the membrane end in the mold, allowing the potting material to cure, whereby the membrane ends are secured in the membrane pot (see Fig. 3); and demoulding the membrane pot (see that the mold is absent from the final product as shown in Fig. 1), the membrane pot having at least one opening (see Fig. 1). It is not disclosed that the base has an ejector portion which is raised to demold. Meyer ('631) teaches a base having an ejector portion (162) and raising the ejector portion to demold. It would have been obvious to one of ordinary skill in the art to have provided

the base of the mold with an ejector to assisting removing the molded object as taught by Meyer ('631) (see col. 8, lines 22-27). Regarding claim 3, the formation comprises at least one upstanding pin (11) mounted in a base of the mold (see Fig. 2A). Regarding claim 4, raising a central ejector portion of the base is also taught by Meyer ('631) (see Figs. 7 and 8). Regarding claim 7, a collar is around the periphery of the mold (see Fig. 3). Regarding claim 8, the mould comprises a base (12) having a plurality of upstanding pins (11). Regarding claim 9, the upstanding pins are sized and distributed for correct gas bubble distribution (see Figs. 2A and B). Regarding claim 10, a plurality of ends of hollow fiber membranes (2) are positioned in the mold. Regarding claim 11, the membrane ends are positioned uniformly in the mold (see Fig. 2B). Regarding claim 12, the membrane ends are sealed (see Fig. 3). Regarding claim 13, the membrane ends are uniformly distributed in relation to at least one opening (see Fig. 2B). Regarding claim 14, the membranes are positioned in a sleeve that holds the membranes; and inserted into a collar around a periphery of the mold (see Fig. 3). The order of steps required by claim 15, filling with curable material before placing membranes, is not explicitly disclosed. However, the following decisions are relied upon for holding selection of the order of adding materials is *prima facie* obvious: *Ex parte Rubin* 128 USPQ 440 (Bd. App. 1959), *In re Burhans* 69 USPQ 330 (CCPA 1946), and *In re Gibson* 5 USPQ 230 (CCPA 1930). Regarding claim 17, the membrane ends are trimmed to provide uniform length (see abstract). Regarding claims 19 and 20, the plurality of ends are positioned in the mould to form a cylindrical array (see Fig. 3).

Claims 1-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Geary (US 3,442,002) in view of Uchida et al. (JP 61-167407 A) and further in view of Meyer (US 3,791,631). Regarding claims 1, 3 and 8-10, Geary ('002) discloses a method comprising providing a plurality of hollow fiber membranes (at least two of 111), the membranes having ends, providing a mold (101 including 905a or 905b) for potting the membrane end; filling the mold with curable potting material (see col. 21, lines 48-55); positioning the membrane end in the mold (see col. 21, lines 48-55, Fig. 13-18); allowing the potting material to at least partially cure, whereby the membrane ends are secured in a membrane pot (see col. 21, lines 64-66); and demolding the membrane pot (see col. 21, lines 66-68). Forming an opening by providing a formation in the base of the mold is not disclosed. Uchida teaches using formations (11) in the base (12) of a mold to make openings (5) in a membrane pot. It would have been obvious to one of ordinary skill in the art to place openings in the membrane pot of Geary ('002) to achieve even feed and high efficiency filtration as explained in the abstract of Uchida. It is not disclosed that the base has an ejector portion which is raised to demold. Meyer ('631) teaches a base having an ejector portion (162) and raising the ejector portion to demold (see col. 8, lines 22-27). It would have been obvious to one of ordinary skill in the art to have provided the base of the mold with an ejector to assisting removing the molded object as taught by Meyer ('631) (see col. 8, lines 22-27). Regarding claim 2, the mold is mounted on a vertically movable platform (see solid vs. phantom lines in Fig. 20). Regarding claim 4, demolding comprises raising a central ejector portion of the mold (see Figs. 7 and 8). Regarding claim 5, in col. 6, lines 45-46 of Geary et al. (US

3,442,002) it would be clear to one of ordinary skill in the art that the phrase "cooling ... or cooling" should read cooling ... or heating. Regarding claim 6, the mold is centrifuged (see col. 21, lines 48-62). Regarding claim 7, a collar is fitted around the periphery of the mold (see Fig. 16). Regarding claim 11, the membrane ends are positioned uniformly (see Fig. 1). Regarding claim 12, the membrane ends are sealed (see Fig. 17). Regarding claim 13, the membrane ends are uniformly distributed in relationship to the at least one opening (see Fig. 1). Regarding claim 14, the membranes are positioned in a sleeve (for example 112) and inserted into a guide or collar around a periphery of the mold (see Fig. 16). The order of steps required by claim 15, filling with curable material before placing membranes, is not explicitly disclosed. However, the following decisions are relied upon for holding selection of the order of adding materials is prima facie obvious: *Ex parte Rubin* 128 USPQ 440 (Bd. App. 1959), *In re Burhans* 69 USPQ 330 (CCPA 1946), and *In re Gibson* 5 USPQ 230 (CCPA 1930). Regarding claim 16, the membrane ends are fanned (see Fig. 1). Regarding claim 17, the membrane ends are trimmed to provide a uniform membrane length (see col. 21, lines 68-75). Regarding claim 18, the membrane pot is cut transversely to open the membrane ends (see col. 21, line 68 to col. 22 line 3). Regarding claims 19 and 20, the membrane ends are positioned in the mold to form a cylindrical array (see Figs. 1-4 and 13-18).

(10) Response to Argument

Rejection of Claims 1, 3, 4, 7-15, 17, 19 and 20 as being unpatentable over Uchida et al. (JP 61-167407 A) in view of Meyer (US 3,791,631)

Appellant argues that Uchida does not disclose a mold and does not disclose demolding. To the contrary, the mold is shown in Fig. 2, and includes container "9", rods "11" and container bottom surface "12". As explained in the paragraph bridging pages 3 and 4 of the translation, the container is filled with a cross-linking resin. The resin is reference character "3". Fig. 3 shows the resin (3) still in the mold (9, 11,12). As explained in the paragraph bridging pages 2 and 3 of the translation, a module is made which includes the cured resin (3) and the module is installed in housing (4), as shown in Fig. 1. Importantly, the mold (9,11,12) is clearly absent in the final product module shown in Fig. 1. This can only mean that the module product has been removed from the mold. Applicant argues that the cured resin is never removed from the mold (9,11,12); however, not removing the cured resin is an *alternative* mentioned at the middle of page 4 of the translation, "It is also possible to use the housing 4 shown in Figure 1 as a container after installing a bottom on one end". In summary while, Uchida does contemplate as an *alternative* curing the resin in housing (4) rather than having a separate mold, the main alternative depicted in the drawings involves curing the resin (3) in mold (9,11,12), removing the cured resin from the mold and installing the cured resin module in housing (4) where the mold (9,11,12) is no longer present as shown in Fig. 1.

Rejection of claims 1-20 as being unpatentable over Geary (US 3,442,002) in view of Uchida et al. (JP 61-167407 A) and further in view of Meyer (US 3,791,631)

Applicant correctly points out that Geary does not disclose the claimed "formation" and "ejector portion" of the mold. One of ordinary skill in the art would have

been motivated to provide the mold of Geary with formations as taught by Uchidia to make holes in the cured resin, and thusly improve filtration efficiency as explained in the first full paragraph of page 3 of the translation. The holes are also beneficial for the purpose of introducing air as explained in the next paragraph of the translation. So to realize either of these benefits, one of ordinary skill in the art would have been strongly motivated to provide formations in the mold of Geary. The motivation to provide an ejector is very clear, to aid in removing the product from the mold, as explained by Meyer in column 2, lines 47-52.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/DAVID L. SORKIN/

Primary Examiner, Art Unit 1797

Conferees:

/David R. Sample/

Supervisory Patent Examiner, Art Unit 1794

/DUANE SMITH/

Supervisory Patent Examiner, Art Unit 1797

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